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cont.

pressing the embossing shim against the surface of an unheated aluminum substrate to transfer thereto the intended hologram /-

Remarks

Applicants have amended Claims 1 and 9 as suggested by Examiner Angebranndt and have added new Claim 26 to this application.

In accordance with 37 CFR 1.607, Applicants respectfully request that an interference be declared between this application and an unexpired patent.

(1) Identification of the patent - U.S. Patent No. 6,017,657 to Mentz et al.

(2) Proposed Count: Applicants propose that Claim 6 in Mentz et al. 6,017,657 be the sole count in the interference.

(3) Claim 1 in Applicants' application substantially corresponds to the proposed count.

(4) Applicants have added Claim 26 to the present application corresponding (identical) to the proposed count.

(5) Attached hereto are a comparison between the proposed count and amended Claim 1 in this application and a comparison between the proposed count and the disclosure in Applicants' application. The disclosures identified as being in Applicants' patent application Serial No. 09/473,246, as set forth in the attached comparison, all originated in Applicants' parent application, Serial No. 08/991,101. Accordingly, Applicants are entitled to the filing date of that parent application for making the proposed count.

(6) Claim 26, which has been added to this application in accordance with § 1.607(a)(4), was not previously presented in this application until more than one year after the issue date of Mentz et al. because Applicants were attempting to distinguish their claims from the claims in Mentz et al. The file history of Mentz et al. was missing in the United States Patent and Trademark Office, and Applicants were not able to obtain a copy of that file history until July 20, 2002, to interpret the meaning of the phrase "aluminum substrate" in Claim 6 of Mentz et al. Examiner Angebranndt has continuously rejected Applicants' broadest claims as "nearly identical" to the claims in Mentz et al. and has suggested that Applicants consider provoking an interference with Mentz et al. Upon receiving a copy of the file history of Mentz et al., Applicants now

believe that Mentz et al. obtained their Claim 6 while arguing a broad interpretation of "aluminum substrate" as including an embossing tool as well as cans and can stock.

Prima Facie Showing by Applicants

In accordance with 37 CFR 1.608(a), Applicants have enclosed herewith a statement by Applicants' attorney alleging that there is a basis upon which Applicants are entitled to a judgment relative to Mentz et al. Applicants' *prima facie* showing is made under 37 CFR 1.608(a) because their effective filing date (December 12, 1997) is less than three months after the effective filing date of Mentz et al. on November 26, 1997.

Possible Common Ownership

37 CFR 1.602(a) states that "Unless good cause is shown, an interference shall not be declared between (1) applications owned by a single party or (2) applications and an unexpired patent owned by a single party." Alcoa Inc. is the owner of all right, title and interest in and to present application Serial No. 09/473,246. Alcoa also has a claim to ownership of Mentz et al. 6,017,657 based on a Cooperative Development Agreement dated June 12, 1996, and amended on December 13, 1996, June 3, 1997 and January 7, 1998, between Aluminum Company of America (prior name of Alcoa Inc.) and Bridgestone Graphic Technologies, Inc., which is the original assignee of Mentz et al. 6,017,657. An acknowledgement of Alcoa's ownership by the current assignee of Mentz et al. would effectively obviate any need for an interference between the present application and the Mentz et al. patent. If an interference is declared, it could be terminated upon an establishment of common ownership of this application and Mentz et al. patent.

Summary

Applicants respectfully submit that they have established an appropriate basis for the declaration of an interference between their application and Mentz et al. 6,017,657, and request that such an interference be declared.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made."

Respectfully submitted,



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pressing at least one of said sister shims against a die having a surface hardness of at least about 200 kg/mm² to transfer said pattern from said at least one sister shim to said die surface,

CONT. providing a metal article to be impressed with said holographic image, said article having a surface hardness of at least about 50 kg/mm², and

pressing said die against a surface on said metal article to transfer said holographic image into a surface on said metal article.

9. (*twice amended*) A method for producing a die for use in impressing a holographic image many times into strip material or numerous articles comprising:

providing a photoresist coated plate,

etching a holographic pattern in the photoresist,

growing a mother shim with said pattern in it from said plate,

pressing said mother shim against a sister shim to transfer said pattern to the sister shim, and pressing the sister shim against a metal die to transfer said pattern to said metal die, and

coating at least a portion of said die bearing said holographic image with a diamond-like coating.

C₂ - 26. A method of for preparing an aluminum article having an embossed hologram thereon, comprising:

preparing a surface-relief holographic master by exposing a photo resist layer to an interfering light pattern and developing;

electroforming a layer of metal onto the holographic master to prepare a negative master;

C₃ removing the negative master from the holographic master and electroforming metal onto the negative master surface to form a positive reproduction of the negative master;

forming an embossing shim by then electroforming nickel in a hardening bath of composition and under conditions effective to produce a layer of nickel of enhanced hardness and durability; and

Version with Markings to Show Changes Made

Claims 1 and 9 have been amended as shown below.

1. *(twice amended)* A method of applying a holographic image to the surface of an article made of hard temper metal comprising:

 providing a photoresist coated plate,

 etching a holographic pattern in the photoresist with said pattern etched to a depth of at least about 3 microns in the photoresist,

 growing a mother shim on said photoresist with said pattern in it from said photoresist,

 transferring said pattern from the mother shim to multiple sister shims,

 pressing at least one of said sister shims against a die having a surface hardness of at least about 200 kg/mm² to transfer said pattern from said at least one sister shim to said die surface,

 providing a metal article to be impressed with said holographic image, said article having a surface hardness of at least about 50 kg/mm², and

 pressing said die against a surface on said metal article to transfer said holographic image into a surface on said metal article.

9. *(twice amended)* A method for producing a die for use in impressing a holographic image many times into strip material or numerous articles comprising:

 providing a photoresist coated plate,

 etching a holographic pattern in the photoresist,

 growing a mother shim with said pattern in it from said plate,

 pressing said mother shim [directly or indirectly] against a sister shim to transfer said pattern to the sister shim, and pressing the sister shim against a metal die to transfer said pattern to said metal die, and

 coating at least a portion of said die bearing said holographic image with a diamond-like coating.

Claim 26 has been added as follows:

-- 26. A method of for preparing an aluminum article having an embossed hologram thereon comprising:

preparing a surface-relief holographic master by exposing a photo resist layer to an interfering light pattern and developing;

electroforming a layer of metal onto the holographic master to prepare a negative master;

removing the negative master from the holographic master and electroforming metal onto the negative master surface to form a positive reproduction of the negative master;

forming an embossing shim by then electroforming nickel in a hardening bath of composition and under conditions effective to produce a layer of nickel of enhanced hardness and durability; and

pressing the embossing shim against the surface of an unheated aluminum substrate to transfer thereto the intended hologram. --

Claim Comparison

Mentz et al. 6,017,657	Application Serial No. 09/473,246
6. A method for preparing an aluminum article having an embossed hologram thereon, comprising preparing a surface-relief holographic master by exposing a photo resist layer and developing;	1. A method of applying a holographic image to the surface of an article made of hard temper metal comprising providing a photoresist coated plate, etching a holographic pattern in the photoresist with said pattern etched to a depth of at least about 3 microns in the photoresist,
electroforming a layer of metal onto the holographic master to prepare a negative master, removing the negative master and electroforming metal onto the negative master surface to form a positive reproduction of the negative master;	growing a mother shim on said photoresist with said pattern in it from said photoresist,
forming an embossing shim by then electroforming nickel in a hardening bath of composition and under conditions effective to produce a layer of nickel of enhanced hardness and durability; and	transferring said pattern from the mother shim to multiple sister shims,
pressing the embossing shim against the surface of an unheated aluminum substrate to transfer thereto the intended hologram.	pressing at least one of said sister shims against a die having a surface hardness of at least about 200 kg/mm ² to transfer said pattern from said at least one sister shim to said die surface, providing a metal article to be impressed with said holographic image, said article having a surface hardness of at least about 50 kg/mm ² , and pressing said die against a surface on said metal article to transfer said holographic image into a surface on said metal article.

Application of Proposed Count to Applicants' Specification

Proposed Count	Application Serial No. 09/473,246 Specification
A method for preparing an aluminum article having an embossed hologram thereon, comprising	<p><u>Page 5, lines 20-24</u></p> <p>According to the present invention, metal cans, can ends, sheet metal or other objects have holographic images or holograms impressed, engraved or embossed in their surfaces by print rolls having the negative of the images impressed in their roll surfaces. The objects that are decorated/embossed in accordance with this invention are preferably made of hard temper aluminum alloys such as 3004 H-19 aluminum.</p>
preparing a surface-relief holographic master by exposing a photo resist layer and developing;	<p><u>Page 6, lines 2-24</u></p> <p>The first step of the process is to create a master hologram as is well known in the art. One common process is to apply a photosensitive coating (photoresist) to a substrate such as glass or metal and to etch the photoresist with two or more coherent beams of light (laser beams) to produce a surface relief pattern (hologram) with a depth corresponding to the intensity of the radiation at each point.</p>
electroforming a layer of metal onto the holographic master to prepare a negative master, removing the negative master and electroforming metal onto the negative master surface to form a positive reproduction of the negative master;	<p><u>Page 7, lines 9-14</u></p> <p>The next step, which is also well known in the art, is to grow a metal shim or mother shim from the master hologram. This can be done by applying a conductive coating (for example, silver spray) over the photoresist and then immersing the photoresist, i.e., the master hologram, in a bath of metal salts such as nickel salts and electrolytically growing or depositing nickel on the master hologram to generate a negative image of the hologram in a nickel shim.</p>

<p>forming an embossing shim by then electroforming nickel in a hardening bath of composition and under conditions effective to produce a layer of nickel of enhanced hardness and durability; and</p>	<p><u>Page 7, lines 21-25</u> The next step in the process is to create multiple shims from the mother shim. It is known in the art to produce 100 or more daughters of the mother shim. This is done by growing daughters of the mother shim (sister shims of each other) in a bath of metal salts in the same manner that the mother shim was grown on the master hologram as described above. In this way many sister shims are grown.</p>
<p>pressing the embossing shim against the surface of an unheated aluminum substrate to transfer thereto the intended hologram.</p>	<p><u>Page 9, lines 15-20</u> The next step in a preferred method of this invention is to transfer the positive image from a sister shim into the surface of a print roll or rolls. This is illustrated in Figure 2. The support rolls are preferably polished aluminum, steel or other hard metal cylinders made from an aluminum alloy such as 6061, 7075 or other 6000 and 7000 series aluminum alloys, or steel alloys such as 4140, 1018, 1045 and mold steel alloys, and have surface hardnesses of about 110-125 kg/mm².</p> <p><u>Page 10, lines 23-25</u> As shown in Figure 2, the shim 12 is pressed against the bright finished (mirror-like finish) print roll 10 by a support roll 14. The image 16 on the shim 12 faces the print roll so the hologram image will be pressed into the surface of the print roll.</p>